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BLM GUIDELINES
FOR IMPLEMENTING
THE SAGE-GROUSE HABITAT ASSESSMENT FRAMEWORK

Issued by the BLM Division of Wildlife, Aquatics and Environmental Protection
December 2019

PURPOSE

These Bureau of Land Management (BLM) guidelines serve four primary purposes:

- To comply with and implement Secretarial Order 3353, "Greater Sage-Grouse Conservation and Cooperation with Western States" (June 7, 2017), by clarifying issues related to BLM sage-grouse land use plans and policies
- To update the expired portion of the Gunnison and Greater Sage-Grouse (including the Bi-State Distinct Population Segment) Habitat Assessment Policy, WO IM 2018-021, which remains in effect until 9/30/2021, and to provide guidance on assessment approaches when sage-grouse seasonal habitat mapping has not been completed
- To implement BLM MS-6500, Wildlife and Fisheries Management, according to which the responsibilities of the chief of the BLM Division of Wildlife, Aquatics and Environmental Protection (once known as the BLM Division of Wildlife and Fisheries) include development of fish and wildlife management policy, procedures, and technical guidance (6500.04.C.1.)
- To recommend that for all BLM undertakings in Greater and Gunnison Sage-Grouse habitat, the BLM initiate, complete, or reference a habitat assessment to inform the fourth fundamental of rangeland health as described in 43 CFR (Code of Federal Regulations) 4180.1, which states: "Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal proposed or candidate threatened and endangered species, and other special status species."

By providing the guidelines herein (which are based on SO 3353, BLM MS-6500, 43 CFR 4180.1, and existing policy), the BLM Division of Wildlife, Aquatics and Environmental Protection is promoting consistency among BLM offices when completing habitat assessments across the range of Gunnison and Greater Sage-Grouse, including the Bi-State Distinct Population Segment (sage-grouse). These guidelines suggest roles and responsibilities; recommend the use of best available science when applying the BLM's habitat assessment framework; describe best practices for data management; and outline the content and use of a Habitat Assessment Summary Report.

BACKGROUND

The BLM assesses sage-grouse habitat following the Sage-Grouse Habitat Assessment Framework: A Multiscale Assessment Tool (Stiver et al. 2015), Technical Reference 6710-1 (HAF). The framework defines indicators of habitat suitability for three spatial scales of habitat selection by sage-grouse: mid scale (Second Order), fine scale (Third Order), and site scale (Fourth Order). The HAF also includes a process for rating these indicators and assessing habitat suitability at each of the three scales. BLM staff should refer to the HAF for a discussion of the mid scale, fine scale, and site scale; habitat suitability indicators; a description of seasonal habitats; and examples of the habitat suitability forms needed to complete the assessment. Instructions on how to complete habitat assessments are found in the HAF training materials. Habitat assessments are completed for each scale by various levels of the BLM (state, district, and field offices, or SO/DO/FOs) in a coordinated fashion. When all scales of assessment are complete (mid scale, fine scale, and site scale), they are combined into a multiscale Habitat Assessment Summary Report. See "Guidelines" below for details on conducting habitat assessments.

The mid-scale, fine-scale, and site-scale habitat assessments *may be* used by the BLM to:

- Determine where to implement management actions to improve sage-grouse habitat
- Identify metrics for setting objectives and determining the effectiveness of vegetation treatments and habitat restoration efforts in sage-grouse habitat
- Provide context in NEPA documents for proposed actions
- Inform habitat values of debits and credits related to compensatory mitigation that can be used with state-developed compensatory mitigation valuation approaches

Site-scale habitat assessments *are required*, through WO IM 2018-021, to be used in the sage-grouse portion of a wildlife/special status species (SSS) land health standards (LHS) evaluation (see BLM H-4180-1, Rangeland Health Standards).

In some areas of the sage-grouse range, completing fine- and site-scale habitat assessments may not be possible if fine-scale boundaries or seasonal habitats within them are not available or are inadequate. These guidelines provide instruction on what to do in those circumstances. Mid-scale boundaries are available rangewide, so habitat assessments at this scale can be, and are being, completed.

Mapping of seasonal habitats and the fine-scale boundaries is an ongoing process that requires continued coordination among BLM offices and partner entities within and between states. The BLM continues to work with partners to improve the quality, consistency, and efficiency of the analytical procedures used in the HAF. Additionally, the BLM continues to explore and review new tools and data to help streamline habitat assessments and will develop corresponding guidance and training as required. The BLM Headquarters (HQ), National Operations Center (NOC), National Training Center (NTC), state offices, and other subject matter experts will conduct training opportunities for sage-grouse habitat assessment data analysis, interpretation, and report writing. Training for field data collection of the core indicators from the Assessment Inventory and Management (AIM) strategy is available and coordinated through the AIM team at the NOC, the NTC, and the appropriate SO program lead(s).

GUIDELINES

These guidelines are organized into new and existing guidelines. New guidelines primarily address site-scale assessments, although they also contain information pertinent to other scales. Existing guidelines are those that remain in effect; however, additional clarification has been provided. Staff should be sure to read all guidance in this document for complete details.

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New Guidelines

After calendar year 2018, a specific section of WO IM 2018-021 expired. This expired section provided guidance, and temporary accommodation, for scenarios where sage-grouse habitat assessments were required by policy but **sage-grouse seasonal habitat mapping and/or fine-scale HAF boundaries were incomplete** (both are necessary to conduct HAF site-scale assessments). The new guidelines in Table 1 below replace the expired guidelines. The table organizes the guidelines according to the current status of fine-scale and/or seasonal habitat mapping (incomplete or complete) to highlight where guidance varies by status. Note that sometimes the guidelines are the same regardless of mapping status.

Table 1. New Guidelines Replacing Those in the Expired Portion of WO IM 2018-021
Underlined text identifies key differences in the guidelines.

Fine-scale and/or Seasonal Habitat Mapping **Incomplete**	Fine-scale and/or Seasonal Habitat Mapping **Complete**
Prioritizing Assessments	
Regardless of mapping status, SO/DO/FOs should give priority to completing assessments in areas where a Habitat Assessment Summary Report will expedite authorizations, permits, or leases as described above.	
Completing Assessments	
LHS Evaluation • SO/DO/FOs **must** complete a site-scale assessment within the area of interest (e.g., an allotment) to inform the wildlife/SSS portion of the LHS evaluation or the associated authorizing document(s). • SO/DO/FOs **should** complete mid-scale and fine-scale assessments, if their boundaries are complete, to inform the wildlife/SSS portion of the LHS evaluation or the associated authorizing document(s).	**LHS Evaluation** • SO/DO/FOs **must** complete a site-scale assessment within the HAF site-scale boundary (i.e., seasonal use areas within the fine scale) to inform the wildlife/SSS portion of the LHS evaluation or the associated authorizing document(s). • SO/DO/FOs **should** complete mid-scale and fine-scale assessments, if their boundaries are complete, to inform the wildlife/SSS portion of the LHS evaluation or the associated authorizing document(s).
NEPA or Other Uses • SO/DO/FOs **should** complete habitat assessments at all appropriate scales (mid scale, fine scale, and/or site scale) to inform the affected environment and impact analyses in NEPA documents for projects occurring in sage-grouse habitat. If a site-scale assessment is appropriate, staff	**NEPA or Other Uses** • SO/DO/FOs **should** complete habitat assessments at all appropriate scales (mid scale, fine scale, and/or site scale) to inform the affected environment and impact analyses in NEPA documents for projects occurring in sage-grouse habitat. If site-scale assessment is appropriate, staff

complete the assessment within the area of interest (e.g., project boundary).	complete the assessment within the HAF site-scale boundary (i.e., seasonal use areas within the fine scale).
Regardless of mapping status, SO/DO/FOs **must** follow the assessment approaches found in the HAF training materials, located on the Science in Practice Portal.	
Reporting Assessments (see "Creating Habitat Assessment Summary Reports" for details)	
LHS Evaluation • For site-scale assessment, the FO **must** complete the Management Unit Supplement template (in lieu of a Scale-specific Report template) to inform the sage-grouse portion of the wildlife/SSS LHS evaluation. • For mid-scale or fine-scale assessments, the FO **must** complete the respective Scale-specific Report template. • Staff do not complete a Full Multiscale Report until the site-scale assessment is completed within a HAF site-scale boundary (not an area of interest).	**LHS Evaluation** • For site-scale assessment, the FO **must** complete the Scale-specific Report template to inform the sage-grouse portion of the wildlife/SSS LHS evaluation. • For mid-scale or fine-scale assessments, the FO **must** complete the respective Scale-specific Report template. • If all scales of assessment are complete (using HAF boundaries), the SO **must** work with the NOC/HQ to compile a Full Multiscale Report.
NEPA or Other Uses • For site-scale assessment, the FO **should** complete the Management Unit Supplement template (in lieu of a Scale-specific Report template). • For mid-scale or fine-scale assessments, the FO **should** complete the respective Scale-specific Report template. • Staff do not complete a Full Multiscale Report until the site-scale assessment is completed within a HAF site-scale boundary (not an area of interest).	**NEPA or Other Uses** • For site-scale assessment, the FO **should** complete the Scale-specific Report template. • For mid-scale or fine-scale assessments, the FO **should** complete the respective Scale-specific Report template. • If all scales of assessment are complete (using HAF boundaries), the SO **should** work with the NOC/HQ to compile a Full Multiscale Report.
Tracking Assessments	
Regardless of the status of mapping, the SO **must** work with the DO/FOs to track assessments as they are planned and completed and report accomplishments to HQ.	

Existing Guidelines

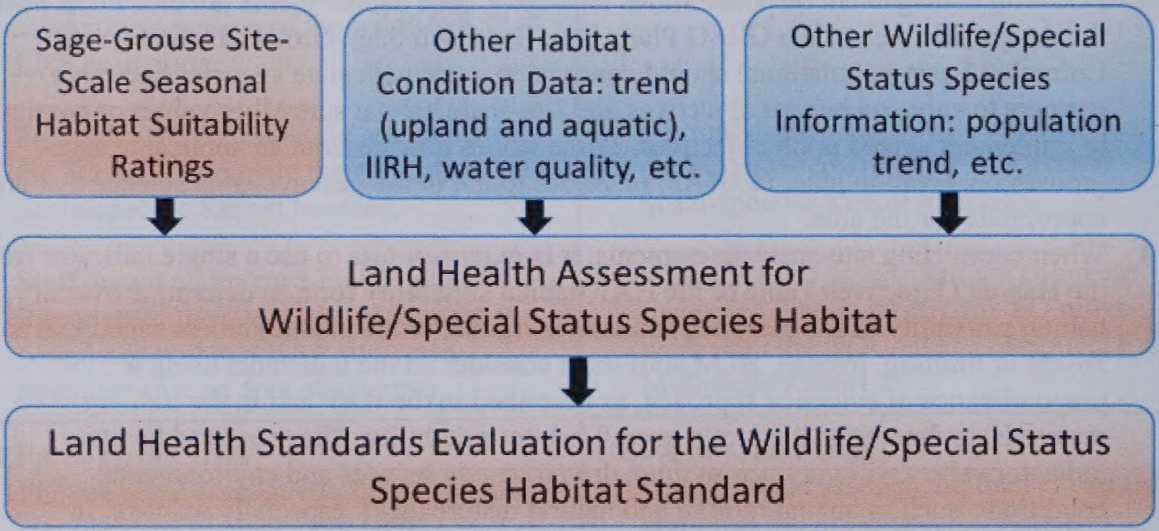
The following guidelines remain in effect from WO IM 2016-144 (Gunnison and Greater Sage-Grouse [including the Bi-State Distinct Population Segment] Habitat Assessment Policy – Obsolete) and WO IM 2018-021.

1. BLM offices that manage sage-grouse habitat are required to use the HAF and instructions found in the HAF training materials (see "Additional Information" below) when assessing sage-grouse habitat. All FOs with a Greater Sage-Grouse (GRSG) Plan are required to refer to, and use where appropriate, the indicators and values in the GRSG Plan's seasonal Habitat Objectives Table and the associated footnotes to inform the site-scale habitat suitability rating.
2. The SO and FOs should continue to develop and refine indicators or values for suitable, marginal, and unsuitable site-scale habitat ratings, with partners if they elect to participate, following BLM Guidelines for Implementing Greater Sage-Grouse Habitat Objectives (August 2019).
3. FOs with management responsibilities for sage-grouse habitat that is not contained within the geographic area of the GRSG Plans (i.e., Gunnison Sage-Grouse, Bi-State, or Columbia Basin populations) should continue to work with state agencies and other partners to agree on habitat objectives and site-scale habitat suitability values or continue to implement agreed upon objectives. These values may be from an applicable sage-grouse conservation plan, the HAF, or values found in the best available science that are appropriate for the area.
4. When completing site-scale assessments, it is *inappropriate* to use a single indicator from the Habitat Objectives Table or the HAF habitat suitability form to determine overall habitat suitability of the plot (i.e., suitable, marginal, or unsuitable) unless sagebrush is absent or limiting. Instead, BLM staff must consider all the indicators using a preponderance of evidence approach, as described in the HAF and in the training materials, to determine the plot's overall habitat suitability. The measured habitat indicator values will vary across time, driven largely by uses and environmental conditions, such as annual rainfall and natural disturbances, especially wildfire. In addition, a site may not meet the suitable rating if many indicators are impacted by annual climate variability, which is independent of management. Thus, it is critical to document environmental factors when completing the habitat suitability forms. This information is essential to inform the LHS evaluation.
5. Staff are encouraged, where possible, to supplement quantitative data collected using the core methods (Herrick et al. 2017; part of the standardized Assessment, Inventory, and Monitoring Strategy) with other data collected by the BLM or partners to inform the indicators for the site-scale habitat assessments. All data must be supported by: (a) repeatable and documented methods, and (b) documented source(s) as well as other pertinent information, such as the season of collection. Limitations, supplemental data, and data gaps must be documented in the Habitat Assessment Summary Report, or in a site-scale report if only the site-scale assessment is completed.
6. The sage-grouse site-scale habitat suitability ratings from the Habitat Assessment Summary Report inform the sage-grouse portion of the wildlife/SSS LHS evaluation (see BLM H-4180-1, Rangeland Health Standards). Given the spatial and temporal variability of habitat and conditions in sagebrush systems, it is desirable to use long-term data and other data collected by the BLM or partners to complete a wildlife/SSS LHS evaluation

(e.g., Interpreting Indicators of Rangeland Health, Technical Reference 1734-6 (IIRH) (Pellant et al. 2005)) (Figure 1). These data must be supported by: (a) repeatable and documented methods, and (b) documented source(s) as well as other pertinent information, such as the season of collection.

7. Online and classroom training is currently available for BLM staff through the National Training Center and other subject matter experts to support the implementation of current policy and these guidelines. Staff are encouraged to contact the national sage-grouse coordinator or the NTC for further information to meet their training needs. HAF training materials and tools are available on the [Science in Practice Portal]().

Figure 1. Illustration of a Wildlife/SSS LHS Evaluation Workflow Incorporating HAF Site-scale Habitat Suitability Ratings


Sage-Grouse Site-Scale Seasonal Habitat Suitability Ratings
Other Habitat Condition Data: trend (upland and aquatic), IIRH, water quality, etc.
Other Wildlife/Special Status Species Information: population trend, etc.
Land Health Assessment for Wildlife/Special Status Species Habitat
Land Health Standards Evaluation for the Wildlife/Special Status Species Habitat Standard

Additional Information

The following information provides further clarification and guidance, building from WO IM 2016-144 and WO IM 2018-021.

Setting Priorities for Completing Sage-Grouse Habitat Assessments

BLM authorized officers should set priorities for completing multiscale sage-grouse habitat assessments. Criteria for setting priorities should be consistent with the applicable land use plan. They should also reflect the priorities for completing land health assessments to support authorizations such as those described in WO IM 2018-024, Setting Priorities for Review and Processing of Grazing Authorizations and Related Livestock Grazing Monitoring. An evaluation of adequate and available data (such as data collected as part of the BLM land use plan effectiveness and land health monitoring—that is, Assessment, Inventory, and Monitoring data) and coordination with state and other partner entities may also inform the selection of priority areas for assessments. Additional consideration may extend to areas where habitat information is limited, where changes in management may have a relatively high likelihood of improving sage-grouse habitat, or where a GRSG Plan adaptive management trigger has been tripped.

The land health assessment and LHS evaluation tasks, including sage-grouse habitat assessments, should not be viewed or completed as separate workloads. These are all components of the BLM requirements of achieving land health standards. Whenever possible, BLM offices complete these tasks simultaneously and in an integrated manner. Land health standards must be achieved or maintained, or significant progress towards achievement must be shown.

Managing Data

To implement multiscale sage-grouse habitat assessments, a high level of coordination is necessary at all levels of the BLM (Washington, state, district, and field offices, the NTC, and the NOC) and with partners. Although some specific duties may change over time, the general responsibilities will remain, as outlined below. The BLM will continue to collaborate with state wildlife agencies, other federal agencies, research partners, and other relevant entities in advancing the assessment process and in sharing results relevant to sage-grouse habitat and populations.

1. All Data:
   a. NOC/SO/DO/FOs are responsible for identifying data gaps and coordinating with one another—as well as with state agencies, other federal agencies, and research partners, as appropriate—to acquire the best available data to inform mid-scale, fine-scale, and site-scale habitat assessment suitability ratings.
   b. NOC/SO geospatial ecologists are responsible for HAF geospatial data management. DO/FOs should coordinate with their respective SO geospatial ecologist for data management needs.
   c. NOC/SO geospatial ecologists are responsible for posting all nonsensitive/restricted data used in habitat assessments to the NOC EGIS central data repository and for following the data standards and naming conventions (data standards guidelines are located within the directory).
2. Mid-scale and fine-scale data: The HQ, NOC, and SO share responsibility for maintaining and updating mid-scale and fine-scale spatial data (e.g., LANDFIRE, Grass-Shrub fractional mapping, anthropogenic disturbances, seasonal habitat boundaries), and authoritative versions will be maintained in the NOC EGIS HAF data repository. The task of analyzing HAF indicators for mid-scale and fine-scale assessments currently falls with the NOC and SOs. Ongoing training is designed to enable the SOs to complete this task independently in coordination with the NOC. As with the cross-border mid-scale and fine-scale boundary delineations, the cross-border assessments will require additional coordination within the BLM and with partners.
3. Site-scale data: The SO/DO/FOs are responsible for site-scale data collection, quality assurance, data management, and coordination with partners. The NOC is responsible for consolidating data that meet the national data standard and for making this data available to the BLM and the public. The NOC also provides support for data analysis and generating statistical estimates.

Establishing Site-Scale Habitat Suitability Indicators and Values

The HAF technical reference includes habitat suitability forms (S2–S6, or S-forms), which document the indicators and values for suitable, marginal, and unsuitable site-scale habitat ratings, based in part on Sather-Blair et al. (2000) and other literature. However, some of the values used to rate the indicators may not be uniformly applicable throughout the range of Greater or Gunnison Sage-Grouse because new science and data have continued to improve our understanding of the site-scale habitat selection. The Habitat Objectives Table in each of the GRSG Plans should reflect the site-scale indicator and values for habitats selected by sage-grouse within the geographic scope of the relevant GRSG Plan. It may be necessary and appropriate to use indicators or values different from those found in the Habitat Objectives Table based on best available science documenting local GRSG seasonal habitat selection criteria. Please refer to BLM Guidelines for Implementing Greater Sage-Grouse Habitat Objectives when considering modifying the indicators and/or values in the Habitat Objectives Table.

When completing the S-forms, BLM staff must aggregate data for *all* indicators on the forms. When making the habitat suitability rating, however, staff must use *only* those indicators and values found in the Habitat Objectives Table of the applicable GRSG Plan, or as modified following the process detailed in BLM Guidelines for Implementing Greater Sage-Grouse Habitat Objectives (August 2019). See details below:

1. Indicators that are not included on the HAF S-forms but that appear in the respective GRSG Plan Habitat Objectives Table or conservation plan for the Gunnison, Bi-State, or Columbia Basin populations must be added to the applicable HAF S-forms.
2. Indicators that are on the HAF S-forms but that do not appear in the respective GRSG Plan Habitat Objectives Table or conservation plan for the Gunnison, Bi-State, or Columbia Basin populations must be measured and their values recorded on the HAF S-forms. The indicator value is recorded only to maintain the completeness of the HAF S-form(s) and will not be used for the suitability rating of the plot. If an indicator is *not* used to make a suitability rating, staff add the following statement in the box where the suitability rating is normally recorded: "No known correlation exists at this time between this indicator and the suitability rating for this seasonal habitat type in this land use plan area." The citation for the supporting science is included on the form and in the report.
3. SOs and FOs must note any change(s) to the HAF S-forms in the "Rationale for Overall Suitability Rating" section of the forms and in the Habitat Assessment Summary Report.

Collecting and Using Data To Inform HAF Site-Scale Indicators

1. SO/DO/FOs (including the state monitoring coordinator) will work with the Branch of Assessment and Monitoring at the NOC to:
   a. Design a sampling strategy within seasonal habitats that conforms to the national, standardized AIM sampling strategy, and/or to
   b. Add sampling locations in sage-grouse seasonal habitats for site-scale assessment.
2. SO/DO/FOs that have previously collected data following methods other than the interagency AIM methods (HAF, Table II-14) should transition to the interagency AIM core methods to help ensure consistent measurements across the range.
   a. The AIM core methods do not inform all of the site-scale indicators identified in the HAF. For example, they do not include the distance from a lek to adequate sagebrush cover, the proximity of detrimental land uses to a lek, the proximity of trees and other

tall structures to a lek, sagebrush shape, or riparian/wet meadow stability. Either geospatial analysis or supplemental methods will be needed, including input of partner data if available.

3. While some HAF indicators may be applicable to multiple seasonal habitats, it is important that grass- and forb-related data are collected during the appropriate phenology.
4. As noted above in the existing policy section, the BLM encourages staff to supplement quantitative data, where possible, with other data collected by the BLM or partners to inform the indicators for the site-scale habitat assessments.

Creating Habitat Assessment Reports

All Habitat Assessment Summary Reports, as described below, must use the report templates located on the Science in Practice Portal: https://spp.blm.gov/programs/haf. The templates are designed to streamline and standardize reporting.

A Full Multiscale Report includes all three scales of habitat assessment (mid scale, fine scale, and site scale). However, there may be cases where only one or two scales are assessed or an assessment is conducted within a management unit or area of interest (because fine scales or seasonal mapping are incomplete). Regardless of which scales are assessed, a summary report must be completed. Consequently, there are three types of summary reports, as described below, and corresponding report templates are available for each:

- **Scale-specific Report** – includes only one scale of habitat assessment (e.g., a stand-alone mid-scale assessment). Most summary reports will be scale-specific initially and then later combined with other scales to create a multiscale report as described below. There are separate report templates for each of the mid-scale, fine-scale, and site-scale assessments.
- **Full Multiscale Report** – includes all three scales of habitat assessment (mid scale, fine scale, and site scale). This report is created by combining the Scale-specific Reports, as described above. The multiscale report template can easily be populated by copying and pasting the Scale-specific Reports into the corresponding sections of the multiscale report.
- **Management Unit Supplement** – includes a habitat assessment conducted within a management unit (e.g., an allotment or project area) instead of a HAF boundary and typically assess site-scale indicators, although large project areas may assess fine-scale indicators if fine-scale boundaries are complete. This type of assessment should occur only where the fine-scale boundaries and/or seasonal habitat mapping are incomplete. These supplements are not incorporated into multiscale summary reports but are instead separate and complementary products.

As each scale-specific assessment and report is completed, DO/FOs are to coordinate with their SO to upload them in the NOC EGIS HAF central repository; DO/FOs are *not* to wait until a full multiscale assessment is complete. When all scales are complete, these Scale-specific Reports will provide all the requisite information to complete a Full Multiscale Report.

For Scale-specific Reports and a Full Multiscale Report:

1. NOC/SO staff are responsible for *analyzing* HAF indicators for mid-scale and fine-scale assessments and providing those results to the DO/FO.
2. SO/DO/FOs are responsible for working together to *interpret* the results of HAF indicator analyses provided by the NOC/SO.
3. SO/DO/FOs are responsible for working together to *write* the mid-scale, fine-scale, and site-scale portions of the Habitat Assessment Summary Reports.
4. The SO is responsible for uploading the summary reports (full and scale-specific) in the NOC EGIS HAF central repository.

For Management Unit Supplements, DO/FOs will coordinate with their SO to upload the reports in the NOC EGIS HAF central repository. In addition:

1. The NOC/SO are responsible for *analyzing* HAF indicators for mid-scale and fine-scale assessments and providing those results to the DO/FO.
2. SO/DO/FOs are responsible for working together to *interpret* the results of HAF indicator analyses provided by the NOC/SO.
3. SO/DO/FOs are responsible for working together to *write* the mid-scale, fine-scale, and site-scale portions of the Habitat Assessment Summary Reports.
4. The SO is responsible for uploading the summary reports (full and scale-specific) in the NOC EGIS HAF central repository.

Using Habitat Assessment Reports (multiscale or scale-specific)

Among other things, Habitat Assessment Summary Reports:

- Inform where to implement conservation or restoration actions to improve sage-grouse habitat at the mid scale, fine scale, and site scale
- Assist in identifying objectives and metrics to be used for planning and monitoring the effectiveness of vegetation treatments and habitat restoration efforts, including post-fire emergency stabilization and burned area rehabilitation in sage-grouse habitat
- Provide baseline conditions and context in NEPA documents (affected environment) for proposed actions in sage-grouse habitats
- Inform the suitability of sage-grouse habitat within a land health assessment area

Habitat Assessment Summary Reports do *not*:

- Replace the need for targeted monitoring to inform the impact of an authorized use. Rather, data needed to inform the relationship between an authorized use and habitat condition will come from sample locations that appropriately reflect the impact of the authorized use on habitat indicators.
- Replace the need to evaluate the wildlife/special status species land health standard for sage-grouse or other species. Rather, the Habitat Assessment Summary Report should be used to inform the evaluation (see Figure 1).

REFERENCES

Herrick, J.E., J.W. Van Zee, S.E. McCord, E.M. Courtright, J.W. Karl, and L.M. Burkett. 2017. Monitoring manual for grassland, shrubland, and savanna ecosystems, 2d ed., vol. 1: Core methods. USDA-ARS Jornada Experimental Range, Las Cruces, New Mexico.

Sather-Blair, S., P. Makela, T. Carrigan, and L. Anderson. 2000. A framework to assist in making sensitive species habitat assessments for BLM-administered public lands in Idaho: Sage-grouse. Unpublished report. Bureau of Land Management, Idaho State Office, Branch of Resources and Science, Boise, Idaho.

Stiver, S.J., E.T. Rinkes, D.E. Naugle, P.D. Makela, D.A. Nance, and J.W. Karl. 2015. Sage-grouse habitat assessment framework: A multiscale assessment tool. Technical Reference 6710-1. Bureau of Land Management and Western Association of Fish and Wildlife Agencies, Denver, Colorado.

Pellant, M., P. Shaver, D.A. Pyke, and J.E. Herrick. 2005. Interpreting indicators of rangeland Health, version 4. Technical Reference 1734-6. U.S. Department of the Interior, Bureau of Land Management, Denver, Colorado.

CONTACTS

BLM staff should use the table below to direct questions or concerns to the biologist, geospatial ecologist, or implementation coordinator at each state or national office.

BLM Sage-Grouse Conservation Contacts (FY19)

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